

BUDNIKOV, P.P.; POPOV, N.M.; SANDULOV, D.B.

Use of a superhigh-voltage electron microscope in studying
filamentary single crystals of beryllium oxide. Dokl. AN
SSSR 164 no.2:323-325 S '65. (MIRA 18:9)

1. Moskovskiy khimiko-tehnologicheskiy institut im. D.I.
Mendeleyeva. 2. Chlen-korrespondent AN SSSR (for Budnikov).

L 48337-65 EEO-2/EWG(j)/FSS-2/ENG(r)/EWT(1)/FS(s)/FS(v)-3/EEC(k)-2/ENG(v)/
EEA(d)/EEC-4/EEC(t)/ENG(a)-2/EWG(c) Po-4/Pe-5/Pq-4/Pac-4/Pi-4/Fac-2
TT/GW

ACCESSION NR: AP5010666

UR/0007/65/000/004/0387/0389

AUTHORS: Vinogradov, A. P.; Vdovykin, G. P.; Popov, N. M.

TITLE: Investigation of carbonaceous matter in meteorites by microdiffraction with ultrahigh velocity electrons

SOURCE: Geokhimiya, no. 4, 1965, 387-389

TOPIC TAGS: diffraction analysis, electron, electron microscopy, meteorite, carbon compound

ABSTRACT: The authors have investigated the structure of the high-molecular carbonaceous matter in the stony meteorites (carbonaceous chondrites) Mighei, Cold Bokkeveld, and Staroye Boriskino, the diamond-bearing achondrite-ureilite Novy Urei, and the carbonaceous inclusions of the iron meteorite Burgavli. The investigations were made with a high-voltage electron microscope having an accelerating voltage of 400 kv. The electron energy was 557 kev and the wavelength 0.016 Å. Allowable thickness of the test material with this setup was about 1 μ , and the microdiffraction selectivity ranged up to 0.05 μ . It was found that the carbonaceous matter in the carbonaceous chondrites consists of high-molecular organic compounds of both amorphous and crystalline structure.

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Extremely fine inclusions of finely dispersed black carbon were also detected, showing traces of graphitization. In the Novy Urei meteorite, organic polymer!! are present, but graphite and diamond form the principal carbonaceous matter. Black carbon and high-molecular organic compounds are also present in the Burgavli meteorite, but graphite is the principal carbonaceous constituent. The authors conclude that the structures of the carbonaceous matter in the meteorites permit the evaluation of not only the nature of development of the carbonaceous matter but of the meteorites themselves. They do not spell out this development, however. Orig. art. has: 4 figures.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR (Institute of Geochemistry and Analytical Chemistry AN SSSR); Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moscow (Institute of the Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry AN SSSR)

SUBMITTED: 01Feb65

ENCL: 00

SUB CODE: AA, MP

NO REF Sov: 006

OTHER: 006

Card 2/2

POPOV, N.M.; SKAKOV, Yu.A.

Investigating the structure of the K40KhM alloy by transmission
electron microscopy. Izv. vys. ucheb. zav.; chern. met. 7 no.3:
143-147 '64. (MIRA 17:4)

1. Moskovskiy institut stali i splavov.

LEMESHEV, M.Ya.; LAGUTIN, N.S.; GREKULOV, L.F.; KRASNOV, V.D.; FROGIN, A.A.; YAKOVLEVA, T.V.; ANAN'YEVA, L.F.; KOLOSOVA, Ye.Ya.; MURASHKO, Yu.V.; GABIDULLIN, V.M.; POPOV, N.I.; POPOV, N.M.; STUDENKOVA, N.M.; SMYSLOVA, A.S.; PANIN, N.S., red.; PANIN, N.S., red.; GERASIMOVA, Ye.S., tekhn.red.

[Methods for creating an abundance of agricultural products in the U.S.S.R.] Puti sozdaniia izobiliia sel'skogo khoziaistvennykh produktov v SSSR. Moskva, Ekonomizdat, 1963. 317 p. (MIRA 16:6)

1. Sektor ekonomiceskikh problem sel'skogo khozyaystva Nauchno-issledovatel'skogo ekonomiceskogo instituta Gosplana SSSR (for all except Panin, N.S., Panin, N.S., Gerasimova).
(Farm produce)

POPOV, N.M.

With the help of super-highspeed electrons. Nauka i zhizn' 29
no.11:54-57 N '62. (MIRA 16:1)

1. Zaveduyushchiy laboratoriyy sverkhvysokovol'tnoy elektronnoy
mikroskopii i elektronografii Instituta radiatsionnoy i fiziko-
khimicheskoy biologii AN SSSR.

(Electron diffraction apparatus)
(Electron microscopy)

VYSOKOSOV, N.V.; DOVGELI, B.A.; LEONOV, I.Ye.; POPOV, N.M., red.;
TOKAREV, M., red.

[Planning state farm production and financial operations] Planirovaniye proizvodstvenno-finansovoi deiatel'nosti sovkhoza. Izd. 2. Moskva, Vses. zaochnye uchetnye kursy (VZUK). No.1. [Planning state farm production (lectures three-six)] Planirovaniye proizvodstva v sovkhozakh (lektsii tret'ia-shestaia). 1960. 63 p.
(MIRA 15:1)

(State farms--Finance)

GOLDAYEV, I.P., kand.tekhn.nauk; POLEVICHET, Ye.P., kand.tekhn.nauk;
POPOV, N.N., kand.tekhn.nauk; SEROGODSKIY, A.V., inzh.

Double cascade air-operated flame drill for rock drilling without
the use of oxygen. Shakht.stroi. 6 no.11:4-6 N '62. (MIRA 15:12)

1. Khar'kovskiy aviatsionnyy institut.
(Rock drills)

POPOV, N.N.

Unsteady one-dimensional motion of a gas being heated in a duct of
variable cross section. Vest. Mosk. un. Ser.1: Mat., fiz., mekh. 16 no.2:
71-79 Mr.-Ap '61. (MIRA 14:4)

1. Kafedra volnovoy dinamiki Moskovskogo gosudarstvennogo universiteta.
(Gas flow)

POPOV, N.N., gornyy inzh.

Breaking in deep holes in the Zlatoust Mine. Gor. zhur. no.4:11-13
Ap '60. (MIRA 14:6)

1. Chelyabinskii nauchno-issledovatel'skiy institut gornogo dela.
(Mining engineering)

24565

S/055/61/000/002/007/007
C111/C22211.9200
AUTHOR:

TITLE:

PERIODICAL: Moscow. Universitet. Vestnik. Seriya I. Matematika,
mekhanika, no.2, 1961, 71-79TEXT: The present paper is a continuation of (Ref.1: N.N.Popov.
Neustanovivshyesya odnomernoye dvizheniye gaza s podvodom tepla v
kanale peremennogo secheniya [Instationary one-dimensional gas motion
with a heat input in a channel of variable cross section], Vestn.Mosk.
un-ta, ser. matem.,mekhan., astron., fiz., khimii, no.3, 1959). There
the approximate solution of the problem was expressed by Bessel functions
and it contains constants which now are determined. Two cases are
proposed.The boundary condition on the wall $x = 0$ reads (1)

$$u \equiv 0.$$

The boundary conditions at the right end are either
1) on the given curve
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S/055/61/000/002/007/007
C111/C222

On the question on the instationary...

$$x_g = f(t)$$

(2)

it holds

$$F_i(u \frac{du}{dt}, p, a, x, t, \dots) \equiv 0 \quad (i=1\dots) \quad (3)$$

or 2. on the unknown curve (2) it holds (3). The initial conditions are

$$\frac{u}{a_0} = \psi(x), \quad \frac{a}{a_0} = \Psi(x). \quad (4)$$

If $x_g = f(t)$ is not known (most difficult case) then it is approximated
by the straight line (5)

$$x = u_g t$$

and (3) is demanded on (5).

From the formula (51) of (Ref.1) for a missing heat input there follows
(for $\alpha = 0$) $\psi(\xi, t) = \dots + C_1(C_2 - \delta^2/\varepsilon + C_3 \delta^2) +$ (6)

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S/055/61/000/002/007/007
C111/C222

On the question on the instationary...
 The conditions at the wall $\xi = 0$ are satisfied with $B_1 = C_3 = C_4 = 0$.

On the other boundary it is demanded $\frac{u(\xi, t)}{a_0} = \xi_g$ for $\xi = \xi_g = \frac{u_g}{a_0}$.

Using the solution (52) of (Ref.1) for $t = 0$ and putting

$$\bar{A}_i = D_i I_{\nu+1} \left(\frac{i\pi}{\xi_g} \right) + E_i I_{-\nu} \left(\frac{i\pi}{\xi_g} \right), \quad (7)$$

and $\bar{B}_i = D_i I_{\nu+1} - E_i I_{-\nu+1}$ then the D_i, E_i can be determined from

$$\bar{A}_i = f_1(\xi) = D_i a_i + E_i b_i, \quad (9)$$

$$\bar{B}_i = f_2(\xi) = D_i c_i + E_i d_i,$$

where a_i, b_i, c_i, d_i are the values of the Bessel function for the given value i .

In the general case it is proposed to approximate the unknown motion of the boundary by a straight line and to substitute u, a and $\frac{du}{dt}$ in (3).

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S/055/61/000/002/007/007
C111/C222

On the question on the instationary...

Then one obtains the expression

$$F(\xi_g, t, D_i, E_i) = 0.$$

Furthermore either a comparison of coefficients can be carried out or the time interval can be subdivided into n parts and (13) is demanded in $t = t_i$ ($i=1, 2, \dots, n$).

As an example the author considers the expansion of a gas in a cylindrical tube during the heating. Then the solution for the gas velocity (cf. (Ref. 1, (48)) at the boundary obtains the form

$$\frac{1}{a_0} \frac{df}{dt} = \xi_g + (c_1 \xi_g^\alpha + c_2 \xi_g^\alpha) (c_3 \delta^{-2/n} + c_4 \delta - \frac{4\varepsilon}{n}) + \\ + \xi_g^{\frac{1-\alpha}{2}} \delta^{-\frac{2t+1}{n}} \sum_{i=1}^n I_{g/2}(\omega_i \xi_g) [A_i I\left(\frac{2\omega_i \delta}{n}\right) + B_i I_{-1}\left(\frac{2\omega_i \delta}{n}\right)], \quad (20)$$

where ξ_g is given by

$$\xi_g = \frac{f(t)}{(t+C)a_0}. \quad (19)$$

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POPOV, N.N.

Determining the resistance of pipe piles when using pile-driving
diesel hammers. Osn., fund. i mekh. grun. 6 [i.e.7] no.218-9 '65.
(MIRA 18:8)

L 62958-65 EWT(1)/EWT(m)/T/EWP(t)/EEC(b)-2/EWP(z)/EWP(b) IJP(c) JD/HW/GG
UR/0020/65/162/001/0064/0066
ACCESSION NR: AP5013442

AUTHOR: Popov, N. M.; Savitskiy, Ye. M.; Tsarev, G. L.
TITLE: Observation of fine structure of single crystals of tungsten by microdif-
fraction of ultrafast electrons

SOURCE: AN SSSR. Doklady, v. 162, no. 1, 1965, 64-66

TOPIC TAGS: tungsten, single crystal, fine structure, electron diffraction analy-
sis, fast particle, particle diffraction

ABSTRACT: Single crystals of tungsten 99.97% pure (estimated impurity content is ~0.001% oxygen and nitrogen) were grown by electron beam zone melting. Samples 0.3 μ thick, parallel and perpendicular to the <100> axis were prepared by electrolytic polishing in 2% NaOH. The specimens were studied with an electron microscope diffraction camera using 557 kev electrons (wavelength 0.016 Å), capable of recording on the same photograph both a picture and a diffraction spectrum of a portion of the specimen. The use of high energy electrons makes it possible to study thicker specimens so that dislocations and inclusions of foreign phases may be more easily observed. Ultrafast electrons also give better contrast in the photographs. The specimens were found to have inclusions varying in size from 0.5 μ to 2.5 μ . Difrac-

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L 62958-65
ACCESSION NR: AP5013442

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tion spectra of these inclusions showed, in addition to tungsten, reflections characteristic of the compound W₂C. Also in specimens cut perpendicular to the growth axis <100>, a cellular growth structure with a cell size of 0.2 to 0.4μ was observed. The formation of this structure is caused by reduction of the freezing point by impurities. Diffraction spectra showed that the cell boundaries were rich in impurities, particularly in the W₂C phase. To introduce dislocations some samples were subjected to slight bending. Both screw and edge dislocations were observed. Dislocations whose ends lay along lines in the <110> direction were identified as screw type. The edge dislocations appeared to form at impurity regions. Orig. art. has: 4 figures.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy) 44-55

SUBMITTED: 16 Nov 64

ENCL: 00

SUB CODE: SS

NO REF Sov: 008

OTHER: 001

llc
Card 2/2

BELEVTSOV, G.A.; GAVRILENKO, N.G.; GRINENKO, I.M.; KOROSTIK, P.O.;
KOTEL'NIKOV, I.V.; KRASAVTSEV, N.I., kand. tekhn. nauk;
MISHCHENKO, N.M.; POPOV, N.M., kand. tekhn. nauk; SEMIK, I.P.,
kand. tekhn. nauk; TOTSKIY, G.P., kand. tekhn. nauk; SHESTOPALOV,
I.I.; Prinimali uchastiye: SOLDATKIN, A.I.; SOLOMKO, V.P.;
SOLOMATIN, A.M.; BOLOTSKIY, D.V.; ZAPOROZHETS, N.P.;
HESSCHASTNYY, A.Ye.; SHVETS, N.Kh.; LIKHUNIN, S.D.; SHUMSKIY, L.B.;
VAS'KOVICH, N.A.; YEROKHINA, A.I.; GELYUKH, B.A.

Desulfuration of pig iron in a fast-revolving and continuous
drum. Met. i gornorud. prom. no.4:3-5 Jl-Ag '65.

(MIRA 18:10)

L 00359-66 EWT(l)/EWP(m)/EWA(d)/FC3(k)/EWA(h)/EWA(c) WW
ACCESSION NR: AT5013289 UR/3043/65/000/004/0184/0210 *b1
b2
b3
b4*

AUTHOR: Volkonskaya, T. G.; Pavlov, B. M.; Popov, N. N.

TITLE: The calculation of compression processes within piston devices

SOURCE: Moscow. Universitet. Vychislitel'nyy tsentr. Sbornik rabot, no. 4, 1965.
Chislennyye metody v gazovoy dinamike (Numerical methods in gas dynamics), 184-210

TOPIC TAGS: Lagrange problem, ideal gas, adiabatic compression, nonsteady flow,
compression shock wave, unsteady shock wave

ABSTRACT: The solution of the Lagrange problem within a channel of variable cross
section is solved numerically taking counterpressure into account. The motion is as-
sumed uni-dimensional and the gas ideal. The calculations are carried out according to
the method of characteristics and using standard subprograms developed at the Computer
Center of the MGU for the calculation of a large class of unidimensional nonsteady gases
flow through tubes. Computations were carried out for the cases of shock and shockless
adiabatic compressions of a gas within the shaft of the piston device for different values
of the piston mass and adiabat index. Results seem sufficient for the understanding of
gas motion patterns needed in practical applications. The shock compression calculation

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L 00359-66

ACCESSION NR: AT5013289

covers the incident unsteady shock wave as well as the one reflected from the walls and from the piston (double reflection). All calculations were carried out on the "Strela" computer of the Computer Center. Results were tested for accuracy by carrying out double calculations with differing lattice steps and a different number of successive approximations at the lattice points. An appendix contains all the pertinent computational formulas. Orig. art. has: 45 formulas, 8 figures, and 3 tables.

ASSOCIATION: Vychislitel'nyy tsentr, Moskovskiy universitet (Computer Center, Moscow University)

SUBMITTED: 00

ENCL: 00

SUB CODE: ME, DP

NO REF SOV: 003

OTHER: 000

Card
2/2

L 00724-66 FSS-2/EWT(1)/EXP(m)/EWA/FCS(k)/ETC(n)/EWA(1) w

ACCESSION NR: AT5013290

UR/3043/65/000/004/0211/0220

AUTHOR: Pavlov, B. M.; Popov, N. N.

TITLE: Numerical solution of the Lagrange problem within a variable cross section channel

SOURCE: Moscow. Universitet. Vychislitel'nyy tsentr. Sbornik rabot, no. 4, 1965. Chislennyye metody v gazovoy dinamike (Numerical methods in gas dynamics), 211-220

TOPIC TAGS: interior ballistics, pipe flow, ideal gas, gas flow, axisymmetric flow, Lagrange problem

ABSTRACT: The problem concerning the interior ballistics of projectiles subjected to gas pressure in tubes closed at one end was investigated by Lagrange in 1793, but no analytical solution is in existence yet. Vychislitel'nyy tsentr (Computer Center) of the MGU started in 1959 the development of a system of standard sub-programs for the numerical solution of various cases of unidimensional motion within tubes of ideal and real gases. In 1961, using these programs (based on the method of characteristics) one of the authors of the present paper solved the Lagrange problem (without counterpressure) for a constant cross section tube. The present paper investigates and solves the Lagrange problem for a tube of variable

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L 00724-66

ACCESSION NR: AT5013290

cross section (without counterpressure). The ideal gas motion is caused by pushing a piston into vacuum in an axisymmetric cylinder of variable cross section. The results concerning pressure distributions, and piston, gas, and sound velocities for various gas and projectile masses are given. Orig. art. has: 7 formulas, 6 figures, and 3 tables.

ASSOCIATION: Vychislitel'nyy tsentr, Moskovskiy universitet (Computer Center, Moscow University)

SUBMITTED: 00

ENCL: 00

SUB CODE: MA, ME

NO REF SOV: 008

OTHER: 000

Card 2/2

L 3080-66 EWT(h)/EPF(c)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG
ACCESSION NR: AP5024001 UR/0020/65/164/002/0323/0325 59
57

AUTHOR: Budnikov, P. P., (Corresponding member AN SSSR); Popov, N. M.; Sandulov, D. B. 55 55 B

TITLE: Use of the superhigh-voltage electron microscope for studying single-crystal whiskers of beryllium oxide 16

SOURCE: AN SSSR. Doklady, v. 164, no. 2, 1965, 323-325, and insert facing p. 307

TOPIC TAGS: beryllium, metal whisker, crystal growth

ABSTRACT: Filamentary crystals of beryllium oxide were grown by high-temperature oxidation of metallic beryllium in an argon atmosphere containing 0.01% N and 0.003% O₂. The moisture content of the argon was 0.03 g/m³ at 760 mm Hg. The oxidation was done in a quartz glass vessel for 24 hours at 1450-1500°. A grayish white cottony mass was formed on the substrate in direct contact with the metallic beryllium. Microscopic analysis showed that this mass was made up of interwoven individual crystals of BeO from 1 to 10-15 mm in length. The grayish color was caused by the presence of small metal spheres on the ends of the filamentary crystals. In several cases, spiderlike formations were observed consisting of several whiskers attached

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L 3080-66

ACCESSION NR: AP5024001

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radially to a single sphere. A superhigh-voltage electron microscope with an accelerating voltage of 400 kv (electron energy of 557 kev) was used for identification of crystals, determination of the direction of growth and the diameter and for studies by transillumination. Calculations made from point electron-diffraction patterns show lattice parameters identical to those of beryllium oxide. The diameter of the BeO whiskers varies from hundredths of a micron to 4-5 μ . The diameter of the spheres on the ends of the crystals varies from 1 to a few dozen microns. The main direction of growth coincides with axes [0001] and [1010]. Orig. art. has: 4 figures.

ASSOCIATION: Moskovskiy khimiko-tehnicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Engineering Institute)

SUBMITTED: 02Jun65

ENCL: 00

SUB CODE: SS, OP

NO REF SOV: 002

OTHER: 003

ber
Card 2/2

POPOV, N.N., khudozhnik-tekhnolog.

New warp-knit cloth for children's and women's apparel. Leg.prom.14
no.3:25-29 Mr '54. (MLRA 7:5)
(Knit goods)

L 25837-66 ENT(1)/EWA(h) GW
ACC NR. AP6011505

SOURCE CODE: UR/0114/65/000/001/0071/0077

AUTHORS: Koshelev, L. I. (Moscow); Popov, N. N. (Moscow); Yartsev, P. I. (Moscow)

ORG: none

TITLE: An experimental study of explosive charges in soft soils for engineering constructions

SOURCE: Fizika gorenija i vzryva, no. 4, 1965, 71-77

TOPIC TAGS: seismology, explosion effect, explosive, construction material

ABSTRACT: A method for determining stresses and deformations occurring with the use of explosives in soils for construction purposes is presented. This method consists of determining an equivalent static charge for the explosion effect. The equivalent static charge lends itself to computation by conventional approaches of structural mechanics. The development of the method of equivalent charge is, however, not easily derived by conventional means. An experimental means was devised to study the effect of various explosive parameters and other properties of the problem as they are related to the equivalent charge. A specially designed testing device is used which measures deflections in the soil for the purpose of computing the equivalent static charge. The following parameters are investigated: 1) the weight of the charge, 2) the distance from its center to the obstacle, 3) the depth of

UDC: 532.593+62.213.4

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L 25837-66

ACC NR: AP6011505

placement of the charge, 4) the angle of incidence of the explosion wave with the obstacle, 5) the vibration frequency at the obstacle, and 6) the soil properties. The construction of the test device and several experimental data plots are given. Orig. art. has: 13 figures and 3 equations.

SUB CODE: 13, 08, 19 / SUBM DATE: none

Card 2/2 (b)

L 23891-66 EWP(e)/EWT(m)/EWA(d)/EWP(t)/ETC(m)-6 IJP(c) JD/WW/JG/WH

ACC NR: A 6008625

SOURCE CODE: UR/0365/65/001/005/0687/0691

AUTHORS: Antonova, Ye. A.; Popov, N. N.

ORG: Institute of Silicate Chemistry, Academy of Science, SSSR (Institut khimii silikatov Akademiya nauk SSSR)

TITLE: Heat-resistant coatings of chromium carbide with a silicate binder

SOURCE: Zashchita metallov, v. 1, no. 6, 1965, 687-691

TOPIC TAGS: protective coating, heat resistant steel, steel, chromium carbide, metal oxidation

ABSTRACT: Conditions for preparation and application of chromium carbide coatings with silicate binders by glazing have been investigated. It was expected that employment of silicates instead of metallic binders would improve the heat resistance of the coating. Finely dispersed powders of borosilicate glass and chromium carbide were used as starting material for the coating. Application by glazing was described in an earlier publication by Ye. A. Antonova and A. A. Appen (Zh. prikl. khimii, 1959, 32, 2468). Annealing was performed in an argon atmosphere. Samples of steel, 40 x 20 x 4 mm served as a substrate. It was established that when the content of the binder is high (40--50%) a solid film of glass is formed on the surface of the coating. It adheres poorly to the carbide phase and peels off readily during cooling. Optimal amount of the binder is 10%. Increase of stability

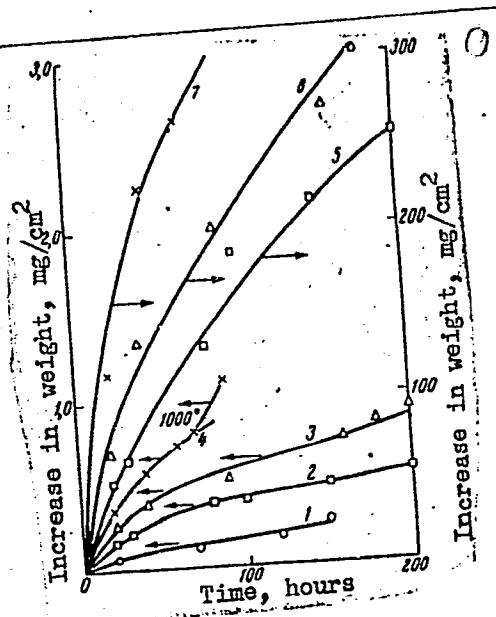
Card 1/2

UDC: 620.197.7

L 23891-66

ACC NR: AP6008625

of coated steel St. 3 is illustrated in Fig. 1.
 Fig. 1. Oxidation curves for St. 3 without
 (1-4) and with (5-7) coatings in air
 and at various temperatures.
 1 - 800C; 2 and 5 - 910C; 3 and
 6 - 950C; 4 and 7 - 1000C.



The coating protects the steel St. 3 from air oxidation during testing for 200 hours at temperatures up to 1000C, possesses satisfactory resistance to thermal shock, and shows a good adhesion to the substrate. Orig. art. has: 4 tables and 4 figures.
 SUB CODE: 07, 11/ SUBM DATE: 12May65/ ORIG REF: 010/ OTH REF: 001
 Card 2/2dda

POPOV, N.N.

Agricultural machinery industry in East Germany. Biul.
tekhn.-ekon.inform. no.8:77-81 '59. (MIRKA 13:1)
(Germany, East--Agricultural machinery industry)

POPOV, N.H.

Light industry in East Germany. Biul. tekhn. ekon. inform. no.9:80-82
'59. (MIRA 13:3)
(Germany, East--Industry)

POPOV, N.N.

Diesel-engine industry in East Germany. Biul. tekhn.-ekon. inform.
(MIRA 13:3)
no.10:75-78 '59.
(Germany, East--Diesel engines)

POPOV, N.N., inzh.

Equipment used for mechanized lopping. Mekh. trud. rab. 12 no.8:
27-28 Ag '58. (MIRA 11:9)
(Lumbering--Machinery)

ZOLOTAREV, V.I.; PEKSHEV, Yu.A.; LENSKIY, B.V.; AVSSNEV, Yu.M.;
KISWYANTSEV, L.A.; SHVETSOV, N.I.; TELEGIN, Ye.I.; ZYKOV, A.A.;
SEMIN, V.P.; METRUSOV, A.A.; GAVRILOV, V.V.; NIKOLAYENKO, Zh.I.;
VOLKOV, N.V.; KALASHNIKOV, A.A.; PLAKSIN, S.V.; POPOV, N.N.;
KARSHINOV, L.N.; YAKIMOV, T.A.; SHALASHOV, V.P.; KOSONOGOV, L.A.;
PUSHENKOV, N.N.; SLADKOVSKIY, M.I., red.; IVANOV, N.I., red.;
LEPNIKOVA, Ye., red.; MOSKVINA, R., tekhn.red.

[Economic development in the people's democracies; review for
1958] Razvitiye ekonomiki stran narodnoi demokratii; obzor za
1958 g. Pod red. M.I. Sladkovskogo i dr. Moskva, Izd-vo sotsial'-
no-ekon.lit-ry, 1959. 358 p. (MIRA 13:7)

1. Moscow. Nauchno-issledovatel'skiy kon'yunktturnyy institut.
(Communist countries--Economic conditions)

ZOLOTAREV, V.I.; PEKSHEV, Yu.A.; LENSKIY, B.V.; AVSENEV, Yu.M.; KISVIANTSSEV,
L.A.; SEVETSOV, N.I.; TELEGIN, Ya.I.; ZYKOV, A.A.; SENIN, V.P.;
METRUSOV, A.A.; GAVRILOV, V.V.; NIKOLAYENKO, Zh.I.; VOLKOV, H.V.;
KALASHNIKOV, A.A.; PLAKSIN, S.V.; POPOV, N.N.; KARSHINOV, L.N.;
YAKIMOVA, T.A.; SHALASHOV, V.P.; KOSONOGOV, L.A.; PUSENKOV, N.N.;
LEPNIKOVA, Ye., red.; MOSKVINA, R., tekhn.red.

[Economic development in the people's democracies; survey for 1958]
Razvitiye ekonomiki stran narodnoi demokratii; obzor za 1958 g. Pod
red. M.I. Sladkovskogo i dr. Moskva, Izd-vo sotsial'no-ekon.lit-ry.
(MIRA 13:7)
1959. 358 p.

1. Moscow. Nauchno-issledovatel'skiy kon'yunktturnyy institut.
(Communist countries--Economic conditions)

Popov, N. N.

ZOLOTAREV, V.I.; AVSENEV, Yu.M.; KAPRANOV, I.A.; KISVYANTSEV, L.A.; PEKSHEV, Yu.A.; SHVETSOV, N.I.; TELEGIN, Ya.I.; POTAPOV, V.I.; KISVYANTSEV, L.A.; ZIKOV, A.A.; METRUSOV, A.A.; SEMIN, V.P.; MAKSIMOVA, A.P.; NIKOLAYENKO, Zh.I.; VOLKOV, N.V.; KALASHNIKOV, A.A.; PLAKSIN, S.V.; POPOV, M.N.; KARSHINOV, L.N.; YAKIMOV, T.A.; BASHKANIKHIN, I.K.; KETKOVICH, A.Ya.; SHALASHOV, V.P.; VORONKOV, F.N.; VEKSHIN, G.K.; CHISTYAKOV, M.A.; IVANOV, N.I., red.; SLADKOVSKIY, M.I., red.; LEPIHIKOVA, Ye., red.; MOSKVINA, R., tekhn.red.

[Development of the economy of the people's democracies; a survey for 1957] Razvitiye ekonomiki stran narodnoi demokratii; obzor za 1957 g. Pod red. N.I. Ivanova i dr. Moscow, Izd-vo sotsial'no-ekon. lit-ry, 1958. 610 p. (MIRA 12:2)

1. Moscow. Nauchno-issledovat. kon'funktturnyy institut.
(People's democracies) (Economic conditions)

POPOV, N. N.

Battleships Pod redaktsiei dotsenta A.E. Tsukhverdt. Leningrad, Red. sudostroitel'noi
lit-ry, 1938. 155 p.

POPOV, N. N.

27257. POPOV, N. N. Vinogradarstvo azerbaidzhana. Vinodelie i vinogradarstvo SSSR, 1949,
No. 8, s. 17-18.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

1500.1.1

POPOV, M.N.; BURSHTEYN, A.N., glavnnyy metodist; CHERNOV, L.M., inzh.;
KOVALEVSKAYA, A.I., red.; KISINA, Ye.I., tekhn.red.

["Viticulture" pavilion; a guidebook] Pavil'on "Vinodelie";
putevoditel'. Moskva, Poshchepromizdat, 1957. 65 p. (MIRA 11:3)

1. Moscow. Vsesoyuznaya promyshlennaya vystavka, 1956- 2. Direk-
tor pavil'ona (for Popov)
(Moscow--Viticulture--Exhibitions)

POPOV, N.N.

Apparatus for continuous vacuum distillation of liquid mixtures. V. V. Vasil'ev, N. N. Popov, and K. I. Tarkov. U.S.S.R. 104,860, Feb. 25, 1937. The app. is a vertical column provided with a deflector and having steam jets through which the mixt. to be fractionated is fed into the bottom of the column. Above the deflector is installed a heat exchanger to recover the heat of the vapors. *Chen* *Hoch*

Papov, N. N.

Defoamer for reactors. N. N. Papov and K. I. Tsirkov.
U.S.S.R. 105,933, June 25, 1957. A defoamer for app. *Ch*
used, e.g., in the oxidation of oil by air or the production of
drying oils, is in the form of a diffuser installed on the arms
of the mixer or on the axes of the paddles inside the app.
Hesch

MT

2

GOLDAYEV, I.P.; POLEVICHET, Ye.P.; POPOV, N.N.; PERSHIN, A.P.

Jet piercing of hard rocks. Biul. tekhn.-ekon. inform. no. 4:3-4 '58.
(Rock drills) (MIRA 11:6)

Popov, N.N.

SOV/130-58-8-3/18

AUTHORS: Dunayev, N.Ye., Ostrovskiy, Ye.G., Engineers and
Popov, N.N., Candidate of Technical Sciences

TITLE: Smelting Steel-making Pig Iron with Complete Elimination
of Manganese Ore from the Charge (Vypivka peredel'noe
chuguna s poluyu vyvodom iz shikhty margantsevoy rudy)

PERIODICAL: Metallurg, 1958, Nr 8, pp 8 - 10 (USSR)

ABSTRACT: Following the lead of the Magnitogorskiy metallurgicheskiy
kombinat (Magnitogorsk Metallurgical Combine) efforts
were made in the southern iron-making region of the USSR
to produce low-manganese pig iron. The comparatively
high coke rates and sulphur contents in the coke in the
smelt made things difficult but the Stalinskiy metallurgi-
cheskiy zavod (Staling Metallurgical Works) succeeded
in 1955 - September, 1957 in reducing manganese-ore con-
sumption by 50-70%, furnace productivity rising by 6%,
coke rate and the cost of 1 ton of iron falling by 6% and
15-20 roubles, respectively. After a transition period,
the manganese in the iron was reduced still further from
0.8-1.2 to 0.22% with further improvements in operation
(table gives the main parameters for 1956 - December, 1957).
It was found unnecessary to have more than 3.0-3.5%
magnesia in the slag with a CaO/SiO₂ ratio of 1.28-1.30 and

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SOV/130-58-8-3/18

Smelting Steel-making Pig Iron with Complete Elimination of
Manganese Ore from the Charge

not less than 7-10% alumina. The favourable effect of removing manganese ores is attributed partly to the improvement of slag formation characteristics with better permeability of the stock column. The authors list the measures required for successful smelting of low-manganese iron under the conditions at the Stalin Works (including additional blast heating to 750-800 °C) and analyse operating data for a week in September, 1957 (Figures 1 and 2). These show that with more blast heating and higher basicity, the sulphur content of the iron falls and iron temperature rises. An editorial note suggests that experience at the imeni Dzerzhinskiy Works shows that slags with 5.0-5.5% alumina are satisfactory if they contain 5.5-6.0% MgO, their CaO/SiO₂ ratio = 1.28-1.30 and (CaO + MgO + MnO)/SiO₂ = 1.45 - 1.46.

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SOV/130-58-8-3/18

Smelting Steel-making Pig Iron with Complete Elimination of
Manganese Ore from the Charge

There are 2 figures and 1 table

ASSOCIATION: Stalinskiy metallurgicheskiy zavod (Stalino
Metallurgical Works)

- 1. Iron--Processing 2. Steel--Production 3. Manganese ores .
- Separation 4. Slags--Performance

Card 3/3

AUTHOR: Popov, N.N., Engineer SOV-118-58-8-11/24

TITLE: Device for Mechanized Bough Cutting (Prisposobleniye dlya mekhanizirovannoy obrezki such'yev)

PERIODICAL: Mekhanizatsiya trudoyemkikh i tyazhelykh rabot, 1958, Nr 8, pp 27-28 (USSR)

ABSTRACT: A group of workers of the Trest Chusovles Permskogo sovkhoza (The Chusovles Trust of the Perm' Sovkhoz) have proposed a method of cutting the boughs of trees brought for loading with the help of a loop formed by a steel cable. Four pieces of 22 mm diameter cable are needed. Two pieces are 8-10 m long and are attached by one end to a tree 5-6 m away. A ring is fixed on the other end of each cable. A third piece of the cable, 2 m long, connects both rings. The tractor trailing a load of trees stops so that the trunks of trees are just over the third piece of cable; another piece of cable, passing over the trunks, is attached to both rings. The tractor, trailing a load of trees begins to move forward and the cable forming a loop cuts or breaks all the boughs. There is 1 diagram and 1 drawing.

1. Lumber--Processing 2. Cutting tools--Performance

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10(6), 10(7), 16(.)

AUTHOR: Papov, N.N.

SOV/55-59-3-3/32

TITLE: Instationary One-Dimensional Gas Motion With Heat Input in a Channel of Variable Cross Section

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 3, pp 19-28 (USSR)

ABSTRACT: The motion equations for the gas motion mentioned in the title are solved under the assumption that the cross section of the channel is slowly variable. At first the case is considered where the pressure is a pure function of the time: $p = p(t)$. Then the equations are linearized in the neighborhood of the corresponding solution: $u = u_1 + u_2(x, t)$. The defining equations for the additional functions $u_2(x, t)$ can be solved rigorously in some cases. The obtained approximate solution then consists of two summands: a rigorous partial solution of the nonlinear system for which the gas velocity depends linearly on the local coordinate and the sound velocity depends on the time, and a rigorous solution of the linearized

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Instationary One-Dimensional Gas Motion With Heat Input SOV/55-59-3-3/32
in a Channel of Variable Cross Section

system which describes the gas oscillations. An example is
considered. The author mentions K.P.Stanyukovich.
There are 2 figures, and 1 Soviet reference.

ASSOCIATION: Kafedra gazovoy dinamiki (Chair of Gas Dynamics)

SUBMITTED: December 4, 1958

Card 2/2

GOLDAYEV, I.P.; POLEVICHET, Ye.P.; POPOV, N.N.; MOTORNENKO, A.P.; SEROGODSKIY,

Thermal drilling of frozen grounds. Biul. tekhn. ekon. inform.
no.9:9-11 '59. (MIRA 13:3)
(Boring--Cold weather operation)

POPOV, N.N.

Unsteady one-dimensional motion of gas with a heat supply in a
channel of variable cross section. Vest. Mosk. un. Ser. mat., mekh.
astron., fiz., khim. 14 no.3:19-27 '59. (MIRA 13:5)

1. Kafedra gazovoy dinamiki Moskovskogo gosudarstvennogo
universiteta.
(Gas flow)

FOPOV, N.N.

New method for designing the mixing chamber of a multijet ejector.
Vest.Mosk.un.Ser.mat., mekh., astron., fiz., khim. 14 no.3:
29-34 '59. (MIRA 13:5)

1. Kafedra gazovoy dinamiki Moskovskogo gosudarstvennogo
universiteta.
(Jets--Fluid dynamics)

GOLDAYEV, I.P., kand.tekhn.nauk; POLEVICHESK, Ye.P., inzh.; POPOV, M.N.,
inzh.; MOTORNENKO, A.P., inzh.; SEROGODSKIY, A.V., inzh.

Using reaction burners in working frozen ground. Mekh.stroi.
16 no.11:21-23 N '59. (MIRA 13:5)
(Earthmoving machinery--Cold weather operation)

VOLCHEK, Ya.L. (Ordzhonikidze); BELOGUROV, A.P. (Ordzhonikidze); POPOV, N.N.
(Ordzhonikidze)

Experience in constructing and operating dispatcher interlocking.
Zhel. dor. transp. 41 no.4:60-65 Ap '59. (MIRA 12:6)

1.Glavnyy inzhener Ordzhonikidzevskoy dorogi (for Volchek). 2. Glavnyy inzhener sluzhby signalizatsii i svyazi Ordzhonikidzevskoy dorogi
(for Belogurov). 3.Nachal'nik tekhnicheskogo otdela sluzhby dvizheniya
Ordzhonikidzevskoy dorogi (for Popov).

(Railroads--Train dispatching)
(Railroads--Signaling--Interlocking systems)

ARKHIPENKO, L.L.; POPOV, N.N.

Using one conductor per train. Zhel.dor.transp. 41 no.6:61-64
Je '59. (MIRA 12:9)

1. Nachal'nik sluzhby dvizheniya i gruzovoy raboty, g. Ordzhonikidze
(for Arkhipenko). 2. Nachal'nik tekhnicheskogo otdela sluzhby
dvizheniya i gruzovoy raboty, g. Ordzhonikidze (for Popov).
(Railroads--Management) (Railroad conductors)

GOLDALEV, Ivan Prokhorovich; POLEVICHET, Yevgeniy Pavlovich; POPOV, Nikolay
Nikolayevich; MOTORHENKO, Aleksey Petrovich; SEROGODSKIY, Al'bert
Viktorovich; YAKHONTOV, A.D., otv.red.; SMOLDYREV, A.Ye., red.izd-va;
LOMILINA, L.N., tekhn.red.; SHKLYAR, S.Ya., tekhn.red.

[Using thermal methods in working frozen ground] Razrabotka
merzlykh gruntov termicheskim sposobom. Moskva. Gos.nauchno-tekhn.
izd-vo lit-ry po gornomu delu, 1960. 46 p. (MIRA 13:4)
(Frozen ground) (Boring)

PEKSHEV, Yu.A.; LENSKIY, B.V.; AVSEMOV, Yu.M.; MIRONOV, V.S.; KISVYANTSEV, L.A.; TELEGIN,
Ya.I.; POTAPOV, V.I.; NETRUSOV, A.A.; ZYKOV, A.A.; KUDIN, B.M.; MAKSI-
MOVA, A.P.; NIKOLAYENKO, Zh.I.; VOLKOV, N.V.; SHVETSOV, N.I.; PLAKSIN,
S.V.; PCPOV, N.N.; KARSHINOV, L.N.; YAKIMOVA, T.A.; SHALASHOV, V.P.;
VISYANIN, Yu.L.; KRASNOV, L.V.; PUSENKOV, N.N.; IVANOV, N.I., red.;
ZOLOTAREV, V.I., red.; SLADKOVSKIY, M.I., red.; LEPNIKOVA, Ye., red.;
KOROLEVA, A., mladshiy red.; NOGINA, N., tekhn. red.

[Economic development of the people's democracies; survey for 1959]
Razvitiye ekonomiki stran narodnoi demokratii; obzor za 1959 god. Pod
red. N.I. Ivanova i dr. Moskva, Izd-vo sotsial'no-ekon. lit-ry, 1960.
(MIRA 14:6)
305 p.

1. Moscow. Nauchno-issledovatel'skiy kon'yunkturnyy institut.
(Europe, Eastern—Economic conditions)

POPOV, N. N., Cand Tech Sci -- (diss) "Research into nozzle apparatuses of reactive burners for thermal boring of mining rock." Khar'kov, 1960. 18 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Dnepropetrovsk Order of Labor Red Banner Mining Inst im Artem.; 200 copies; free; bibliography at end of text; (KL, 22-60, 138)

S/055/60/000/02/08/009

AUTHOR: Popov, N.N.

TITLE: The Application of the Limiting Solution of the Equation of One-Dimensional Motion to the Problem on the Expansion of Heated Gas

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya I, matematika, mehanika, 1960, No. 2, pp. 65-71

TEXT: In (Ref.1) the author has proposed an approximate method for the solution of the general equations of a one-dimensional instationary gas motion. The solution was obtained as the sum of the first approximation (depending only on the time) and the second approximation. Now it is stated that there exists a number of problems for which the first approximation is already sufficient to be used as a base for calculations. As an example the author considers a one-dimensional instationary gas flow with an addition of heat in a channel if the cross section of the channel is

$$(2) \quad F = F_0(x+b)^\alpha$$

and the addition of heat is $Q = Q(t)$. If $Q(t)$ is linear, then the process can be described by the "limiting solution" which does not depend on the local coordinates.

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S/055/60/000/004/007/007XX
C111/C222

AUTHOR: Popov, N.N.

TITLE: The Propagation of the Discontinuity Line in Heated Gas

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya I matematika,
mekhanika, 1960, No.4, pp.45-49

TEXT: Let u - velocity, p - pressure, a - sound velocity. The author
considers two gases with the parameters (p_1, a_1, u_1) and (p_2, a_2, u_2) separated
by the discontinuity line (fig.1)

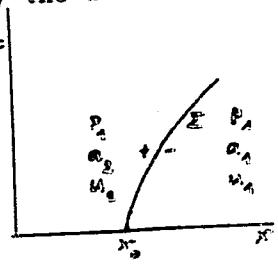


fig.1

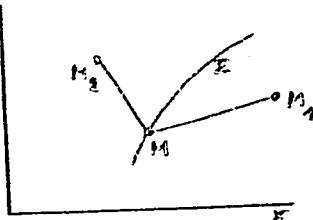


fig.2

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The Propagation of the Discontinuity Line in Heated Gas

The one-dimensional instationary gas motion is described by

$$(2) \quad \frac{\partial u}{\partial t} + u \frac{\partial u}{\partial x} + \frac{2a}{\gamma-1} \frac{\partial a}{\partial x} = \frac{a^2}{\mu(\gamma-1)} \frac{\partial \ln \phi}{\partial x}$$

$$\frac{\partial a}{\partial t} + u \frac{\partial a}{\partial x} + \frac{\gamma-1}{2} a \frac{\partial u}{\partial x} = \frac{\gamma-1}{2a} q - \frac{\gamma-1}{2} au \frac{d \ln F}{dx}$$

$$\phi = \phi_0 e^{\int_0^t \frac{q}{a^2} dt}, \quad q = \frac{dq}{dt},$$

✓

where $F(x)$ - variable cross section of the channel, $Q(x, t)$ - heat input,

$$(3) \quad \phi = \frac{p}{g F}.$$

If $M_1 M$ and $M_2 M$ are the two characteristics through the point M on Σ (fig. 2),
 then on $M_2 M$, along which there propagates the disturbance of the gas
 expansion, it holds:

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The Propagation of the Discontinuity Line in Heated Gas

$$(8) \frac{du}{dt} = -\frac{1}{\gamma e - 1} da_2 + \left(\frac{\gamma a_2}{a_2} - a_2 u \right) \frac{d \ln F}{dx} + \frac{a_2^2}{\gamma(\gamma e - 1)} \frac{\partial \ln \phi_2}{\partial x} dt.$$

Along Σ there propagates the compressing disturbance, here it is

$$(9) \frac{du}{dt} = \frac{2}{\gamma e - 1} da_1 - \left(\frac{\gamma a_1}{a_1} - a_1 u \right) \frac{d \ln F}{dx} - \frac{a_1^2}{\gamma(\gamma e - 1)} \frac{\partial \ln \phi_1}{\partial x} dt,$$

where it is put $\gamma_1 = \gamma_2 = \gamma e$.

For the derivation along Σ : $(\frac{du}{dt})_{\Sigma} = \frac{\partial u}{\partial t} + u \frac{\partial u}{\partial x}$ the author finds \times

$$(15) (\frac{du}{dt}) = \frac{1}{\left[1 + \left(\frac{\phi_{01}}{\phi_{02}} \right)^{1/\gamma} \frac{a_1}{a_2} \frac{e^{a_2}}{e^{a_1}} \right]} \left[a_1 \frac{\partial u_1}{\partial x} - a_2 \frac{\partial u_2}{\partial x} + u(a_1 + a_2) \frac{d \ln F}{dx} + \right]$$

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The Propagation of the Discontinuity Line in Heated Gas

$$+ \frac{1}{\alpha(\alpha-1)} \left(a_1^2 \frac{\partial \ln \phi_1}{\partial x} - a_2^2 \frac{\partial \ln \phi_2}{\partial x} \right) - \frac{\alpha q_2}{a_2} - \frac{(\alpha-1)q_1}{a_1} - \left(\frac{\phi_{01}}{\phi_{02}} \right)^{1/\alpha} \frac{e^{\alpha_1}}{e^{\alpha_2}} \frac{q_2}{a_1} + \\ + a_1 \left[\frac{\partial a_1}{\partial x} \right] + a_2 \frac{\partial u_2}{\partial x} + \frac{\alpha q_2}{a_2} - a_2 u = \frac{\partial \ln F}{\partial x} + \frac{a_2^2}{\alpha(\alpha-1)} \frac{\partial \ln \phi_2}{\partial x} . \quad X$$

where

$$\alpha_1 = (\alpha-1) \int_0^t \frac{q_1}{a_1} dt, \quad \alpha_2 = (\alpha-1) \int_0^t \frac{q_2}{a_2} dt.$$

In order to obtain a differential equation from (15), all terms have to be expressed by u and t .
 (15) is used for determining the motion of Σ for small times t . For this aim the author develops the velocity of Σ in the neighborhood of the initial point $t = 0, x = x_0$.

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The Propagation of the Discontinuity Line in Heated Gas

$$(16) \quad u_{\Sigma}(t) = u_{\Sigma}(x_0) + \left(\frac{du_{\Sigma}}{dt} \right)_0 \cdot t + \left(\frac{d^2 u_{\Sigma}}{dt^2} \right)_0 \cdot \frac{t^2}{2} + \dots$$

Taking now (15) and the derivatives of the expression (15) with respect to t and substituting there the given initial values, then one obtains the coefficients of (16) and therewith $u_{\Sigma} = u_{\Sigma}(t)$ for small t .
Besides, (15) can be used for determining the origin of a shock wave in the gas. A numerical example is given.

There is 1 Soviet reference and 3 figures.

ASSOCIATION: Kafedra volnovoy dinamiki (Chair of Wave Dynamics)

SUBMITTED: June 23, 1959

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S/123/60/000/005/011/012
4004/A001

AUTHOR: Popov, N.N.

TITLE: The Electrical Engineering Industry of the GDR (German Democratic Republic)

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No.5, pp. 78 - 80

TEXT: The author points out that the electrical engineering industry is one of the most advanced industrial branches of the GDR, with more than 210,000 employees, i.e. 7% of all industrial laborers. By the end of 1958 there were 602 electrical engineering plants in the GDR. The most important and biggest of them are: Karl-Liebknecht Transformatorenwerke in Berlin, Elektromotorenwerk Wernigerode, Elektroapparatewerk (formerly AEG) in Berlin, the Radeberg Plant, the "Koepenick"/Werk in Berlin and others. 27% of the production of the electrical engineering industry is manufactured in the East Sector of Berlin, 18.8% in the Dresden area and 11.8% in the Karl-Marx-Stadt area. In 1958 the gross output of the GDR electrical engineering industry amounted to nearly 4 billion marks. The table presents data on the main production items of the GDR electrical engineering industry from 1950 - 1958. ✓

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A004/A001

The Electrical Engineering Industry of the GDR (German Democratic Republic)

Table:

1) Виды продукции	1950 г.	1955 г.	1956 г.	1957 г.	1958 г.
2) Электродвигатели переменного то- ка, тыс. шт.	116,3	204,6	225,6	262,9	283,2
3) Трансформаторы, тыс. шт.	3,9	6,2	10,5	8,9	8,2
4) Электропечи, млн. марок . . . . .	...	9,2	10,4	11,9	11,5
5) Рентгеновские аппараты и принад- лежности к ним, млн. марок . . . . .	...	15,4	14,3	15,6	19,2
6) Электромедицинские аппараты, млн. марок . . . . .	...	7,5	8,4	8,4	11,4
7) Электробытовые приборы, млн. ма- рок . . . . .	...	88,9	106,1	111,9	141,7
8) Кабель и провод, млн. марок	277,3	308,4	335,9	355,6	388,8
9) Радиоприемники, тыс. шт.	—	724,7	653,0	663,7	718,2
10) Телевизоры, тыс. шт.	—	38,6	55,4	108,8	180,0
11) Аккумуляторы, млн. марок	23,5	47,8	45,8	49,2	59,6
12) Электролампы (большие), млн. шт. . .	44,9	44,8	49,8	46,0	45,4
13) Электролампы (малые), млн. шт. . .	—	—	—	—	—

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A004/A001

The Electrical Engineering Industry of the GDR (German Democratic Republic)

Table 1: 1) kind of production; 2) a-c electromotors, 1,000 pieces; 3) transformers, 1,000 pieces; 4) electric furnaces, in million mark; 5) X-ray apparatus and accessories, in mill. mark; 6) electric medical appliances, in mill. marks; 7) domestic electric appliances, mill marks; 8) cables and wiring, mill. marks; 9) radio sets, 1,000 pieces; 10) TV-sets, 1,000 pieces; 11) accumulators, mill. marks; 12) electric bulbs (large-size), million pieces; 13) electric bulbs (small-size), million pieces.

Electromotors of different types and capacities are manufactured, e.g. at the Elektromotorenwerk Wernigerode asynchronous electromotors of from 1.6 to 10 kw at 1,500 rpm are manufactured. The big-lot production of a-c motors of up to 100 kw with aluminum winding has been organized. At the Leipzig Spring Fair the Karl-Liebknecht Transformatorenwerke exhibited a high-voltage compressed-gas circuit breaker of 220 kv with a rated breaking capacity of 7.5 million kva. The Seven-Year Plan provides for a considerable increase in power output, from 34.9 billion kwh in 1958 to 63 billion kwh in 1965. For the transmission of electric power to the main consumption centers like Berlin, Halle, Leipzig and Karl-Marx-Stadt, a high-tension line of 380 kv is projected. The present high-tension network of

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A004/A001

The Electrical Engineering Industry of the GDR (German Democratic Republic)

220 kv is to be extended by 1,100 km, the 110 kv network by 2,300 km. The cable production is to be increased by 1.8 times, that of high-voltage circuit breakers doubled. The latter will be produced with a breaking capacity of 8 million kva for 220 kv and 12 million kva for 380 kv. The production of oil-filled aluminum cables for 380 kv for the transmission of up to 200,000 kva has been organized. The production of traveling semi-automatic and automatic welding apparatus has been taken up. In spring 1959 an electron-controlled welding machine with a capacity of 500 spots/minute was shown at the Leipzig Fair. It is planned to increase the output of the GDR electrical engineering industry from 4 billion marks in 1958 to 10.6 billion marks in 1965. During this period the transformer production is to be increased from 5,646 thousand to 13,716 thousand kva. Correspondingly, the production of TV-sets is to be increased from 180,000 to 760,000 pieces, while the production of domestic electric appliances is to be raised from 56 million to 210 million marks. There is 1 table and 7 non-Soviet references.

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VORONTSOV-VEL'YAMINOV, Nikolay Pavlovich, dotsent; SHAGINOV, Dmitriy Luk'yannovich, dotsent; PETROV, Nikolay Mitrofanovich, dotsent. Prinimal uchastiye POPOV, N.N., dotsent. DOMBROVSKIY, N.G., prof., doktor tekhn.nauk, red.; BULOV, B.A., inzh., nauchnyy red.; REYSH, A.K., inzh., nauchnyy red.; UDOD, V.Ye., red.izd-va; NAUMOVA, G.D., tekhn.red.

[Building machinery; album of drawings] Stroitel'nye mashiny; al'bom chertezhei. Pod red. N.G.Dombrovskogo. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1960. 5 p. 294 p. of diagrs.

(MIRA 13:12)

1. Kafedra "Stroitel'nye mashiny" Moskovskogo ordena Trudovogo Krasnogo Znameni inzhenerno-stroitel'nogo instituta imeni V.V.Kuybysheva (for Vorontsov-Vel'yaminov, Shaginov, Petrov). 2. Voyenno-transportnaya akademiya (for Popov).

(Building machinery)

POPOV, N.N.

Wood-pulp paper industry in the German Democratic Republic. Biul.
tekhn.-ekon.inform. no.9:79-80 '60.
(Germany, East--Paper industry) (MIRA 13:10)

84053

S/147/60/000/003/012/018
E191/E481

11.7410

AUTHOR: Popov, N.N.

TITLE: Contribution to the Problem of the Mixing of Gas Streams

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1960, No.3, pp.80-86

TEXT: An attempt is made to establish a general theory of the mixing of gas flows in various ejector devices on the basis of the multi-component fluid model proposed by Kh.A.Rakhmatullin (Prikladnaya matematika i mehanika, 1956, No.2). One-dimensional steady state motion is considered. Referring to the author's previous work (Vestnik Moskovskogo universiteta, 1959, No.3), dealing with the theory of the mixing chamber in a multi-jet ejector of arbitrary shape, it is stated that in the Department for Wave Motion and Gas Dynamics at the Moscow State University, experiments have been carried out to verify the theory of the multi-jet ejector and to determine the so-called interaction function at room temperature. The experiments have supported the multi-component fluid concept. An ejector is considered in which the driving fluid is fed to a large number of points of the cross-section and the pressures of the two gases are equal. On the

Card 1/2

POPOV, N. N.

Applying the limiting solution of the equation for linear
flow to the problem of expansion of a heated gas. Vest.
Mosk.un.Ser. 1: Mat., mekh. 15 no.2:65-71 Mr-Ap '60.
(MIRA 13:8)

1. Kafedra volnovoy i gazovoy dinamiki Moskovskogo universiteta.
(Aerodynamics)

POPOV, N.N.

Determining the motion of the discontinuity line in a subjected to
heat. Vest. Mosk. un. Ser.1: Mat., mekh. 15 no.4:45-49 Jl-Ag '60.

1. Kafedra volnovoy dinamiki Moskovskogo universiteta.
(Fluid mechanics)

POPOV, N.N., inzh.; KOLTYPIN, A.L., inzh.; TSIRKOV, K.I., inzh.

PETs-1 extraction plant. Masl.-zhir.prom. 26 no.12,37-38 D 160.
(MIRA 13:12)

1. Giprozhir.

(Extraction apparatus)

BORISOV, N.Ya., red.; ZAZERSKIY, Ye.Ya., red.; PANOV, N.N., red.; POPOV,
N.N., red.

[Special issue "Let's prepare for the 22nd Congress of the CPSU]
Spetsial'nyi vypusk: Navstrechu XXII s"edzu KPSS. Leningrad,
Lenizdat, 1961. 175 p.
(Russia—Industries) (Agriculture —Labor productivity)
(MIRA 14:8)

POPOV, Nikolay Nikiforovich; TITSKAYA, B.F., ved. red.; TROFIMOV,
A.V., tekhn. red.

[Determining the consumption of liquid fuel by motor vehicles
and tractors; reference tables] Opredelenie raskhoda zhid-
kogo topliva avtomobiliami i traktorami; spravochnye tablitsy.
Moskva, Gostoptekhizdat, 1961. 197 p. (MIRA 15:7)
(Motor vehicles—Fuel consumption)
(Tractors—Fuel consumption)

NIKIFOROV, L.A.; NIKOLAYENKO, Zh.I.; VOLKOV, N.V.; SHVETSOV, N.I.;
PLAKSIN, S.V.; POPOV, N.N.; PEKSHEV, Yu.A.; KARSHINOV, L.N.;
YAKIMOVA, T.A.; SHALASHOV, V.P.; VASYANIN, Yu.L.; KRASNOV, L.V.;
FUSENKO, N.N.; VASIL'YEVA, G.N.; TSAGURIYA, G.M., tekhn. red.

[Economic development of the people's democracies of Europe and
Asia; statistical collection] Razvitiye ekonomiki stran narodnoi
demokratii Evropy i Azii; statisticheskii sbornik. Moskva,
Vneshtorgizdat, 1961. 470 p. (MIRA 15:5)
(Communist countries--Statistics)

POPOV, N.N.

Boring and blasting operations in mining thin deposits.
Biul. TSIUCHI no.5:31-33 '61. (MIRA 14:10)

1. Chelyabinskii nauchno-issledovatel'skiy institut gornogo dela.
(Boring)
(Blasting)

KRASAVIN, A.P., inzh.; POPOV, N.N., inzh.

New system for thin bed mining. Bezop. truda v prom. 5 no. 3:11-12
Mr '61. (MIRA 14:3)

1. Chelyabinskiy nauchno-issledovatel'skiy institut gornogo dela.
(Mining engineering)

POPOV, N.N.

Some recent data on the anatomical and morphological structure
of the corn leaf. Dokl. AN SSSR 139 no.6:1474-1475 Ag '61.
(MIRA 14:8)

1. Kazanskiy gosudarstvennyy pedagogicheskiy institut.
Predstavлено академиком V.N. Sukachevым.
(Leaves—Morphology)
(Corn (Maize))

POPOV, N.N.

New model of a conducting gas. Izv.vys.ucheb.zav.; av.tekh. 5
no.3:46-53 '62. (MIRA 15:9)
(Plasma (Ionized gases))

POPOV, N.N.

How to impart high flight velocities to bodies. Vest. Mosk. un.
Ser. 1: Mat.,mekh. 17 no.4:69-74 Jl-Ag '62. (MIRA 15:7)

1. Kafedra volnovoy i gazovoy dinamiki Moskovskogo universiteta.
(Gas dynamics) (Motion)

KRASAVIN, Aleksandr Pavlovich; POPOV, Nikolay Nikolayevich;
BOGUSLAVSKIY, Emil' Iosifovich. Prinimali uchastiye:
TISHCHENKO, V.I.; KLYKOV, M.V.; YEROKHIN, G.M., red.
izd-va; LAVRENT'YEVA, L.G., tekhn. red.

[Mine worker] Zaboishchik na rudnikakh. Moskva, Gosgor-
tekhizdat, 1963. 150 p. (MIRA 16:8)
(Mining engineering)

YAROSHEVSKIY, S.L.; POPOV, N.N., kand. tekhn. nauk

Temperature control of cast iron and slag at blast furnace outlets. Met. i gornorud. prom. no.5:11-13 S-0 '63.

(MIRA 16:11)

l. Donetskiy nauchno-issledovatel'skiy institut chernoy metallurgii Gosplana UkrSSR.

KOROSTIK, P.O.; KOTEL'NIKOV, I.V.; PANEV, G.A.; KRASAVTSEV, N.I.; SOLDATKIN, A.I.;
POPOV, N.N.; DUNAYEV, N.Ye.; YAROSHEVSKIY, S.L.

Blast furnace smelting with coke made of a charge having an increased
content of gas coal. Met.i gornorud. prom. no. 647-10 N-D '63.
(MIRA 18:1)

DRACHEVA, Nadezhda Pavlovna; POPOV, Nikolay Nikolaevich; SMYSLOV,
Yu.V., red.

[The German Democratic Republic in the system of the
international socialist division of labor] Germanskaia De-
mokraticeskaiia Respublika v sisteme mezhunarodnogo so-
tsialisticheskogo razdelenija truda. Moskva, Izd-vo IMO,
1963. 254 p. (MIRA 17:4)

S/2659/63/010/000/0219/0225

ACCESSION NR: AT4013955

AUTHOR: Prokoshkin, D. A.; Vasil'yeva, Ye. V.; Popov, N. N.

TITLE: The properties of alloys of the niobium-tungsten-titanium system

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprovodnym splavam, v. 10, 1963, 219-225

TOPIC TAGS: alloy strength, alloy property, alloy oxidation, niobium alloy, niobium tungsten titanium alloy, tungsten containing alloy, titanium containing alloy, ternary alloy

ABSTRACT: In view of the fact that binary alloys containing Nb can be used only for special purposes, the authors undertook a study of the structure and properties of five ternary alloys of the Nb-W-Ti system containing 15% by weight of W and 0, 3, 10, 15 or 20% by weight of Ti. The alloys were prepared from 99.9% pure niobium, 99.95% pure tungsten, and iodide titanium in an arc furnace (purified argon atmosphere) with a nonconsumable electrode on a watercooled Cu bottom. Two test ingots were prepared from each alloy and subjected to diffusion annealing for 48 hours at 1700C. The authors studied the microstructure of the cast and annealed samples, the specific gravity, the hardness at room and high temperatures, high-temperature creep and the oxidation behavior. As expected, the specific gravity decreased with increasing Ti content, as did the hardness at

Card 1/2

POPOV, Nikolay Nikolayevich; RASTORGUYEV, Boris Sergeyevich

[Calculating reinforced concrete structural elements
for transient dynamic loads] Raschet zhelezobetonnykh
konstruktsii na deistvie kratkovremennykh dinamicheskikh
nagruzok. Moskva, Stroizdat, 1964. 150 p.
(MIRA 17:11)

FOFOV, Nikoley Nikiforovich; LEVINA, Ye.S., ved. red.

[Determining the consumption of liquid fuel by motor vehicles and tractors; reference tables] Opredelenie raskhoda zhidkogo topliva avtomobiliami i traktorami; spravochnye tablitsy. 2., perer. i dop. izd. Moskva, Khimia, 1964. 314 p. (Mira 18:1)

KOTEL'NIKOV, I.V.; F NOMAREV, P.U.; GRINBERG, Yu.I.; GALAYEV, I.P.;
TORBA, V.G.; POPOV, N.N.; VARAVA, V.I.

Making ferromanganese with the use of manganese carbonate
ores. Met. i gornorud. prom. no.3;6-9 My-Je '64.

(MIRA 17:10)

L 14399-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Pe-5 AEDC(a)/
AFWL/SSD/AFETB/AFTC(a) DD/ENS/RD
ACCESSION NR: AF4046784 S/0293/64/002/005/0805/0811

AUTHOR: Gozulov, S. A.; Mirolyubov, G. P.; Popov, N. N.; Frolov, N. I.

TITLE: Experimental investigation of the influence of impacts on the organism

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 5, 1964, 805-811

TOPIC TAGS: rat, dog, impact, simulation test, reentry

ABSTRACT: Rats and dogs were exposed to impacts ranging from 4 to 13.6 m/sec and with load magnitudes of from 800—900 units and durations of 10 to 1 msec. Experiments took place on an impact stand where animals were fixed in place to receive spine-to-chest forces. In all, 169 experiments were conducted on 100 rats and 69 dogs. In addition, animals were exposed to repeated impact in 40 tests. Electrocardiograms and respiration rate were registered from both rats and dogs. In addition, arterial pressure was recorded from dogs using electro-magnetic or piezoelectric pickups. Results of the investigations

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showed that variations in the pulse rate in rats depended upon the magnitude of impact. Comparatively small impacts produced an increase (43% above normal) or decrease (57%) in the pulse rate. Following large impacts there was a 50% decrease in the pulse rate. In the majority of cases, when impact produced a decreased pulse rate, there was also injury to internal organs. Of 100 rats, 82 exhibited injury to one or more organs, while 18 showed only slight damage, characterized by subcutaneous or intramuscular hemorrhaging. The lungs appeared to be the organs most susceptible to impact. In dogs there was a decrease in the pulse rate (40-60%) for 10-30 sec following impacts greater than 200 units. During the first minute following impact, decreased arterial pressure ranged from 30-20 mm Hg. As in rats, there was a deepening of the S spike and an increase in the T spike with a general background of tachycardia. In all experiments dogs were exposed to speeds of 13-13.6 m/sec with impacts of 80-870 units. Impacts of 200 units (55 experiments) brought on maximum increases in heart and respiration rates during the first 10-15 sec after landing. To study the cumulative effects of impact, rats and dogs were exposed to repeated impacts. In rats exposed to three impacts of 300-350 units (10 minute intervals) there was a particularly

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L 14399-65
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O
significant disruption of cardiac rhythm (extrasystole and atrioventricular blockage). In general, repeated impact tended to intensify functional disruption. Dogs exposed to 4-5 impacts (in the 200-unit range) with durations of 10-15 msec and intervals between impacts of 2.5 days did not show this increased disruption of physiological functions, possibly because of the greater interval between impacts. As in rats, the lungs of the dogs were the organs most susceptible to damage as a result of large impacts. The material indicates that the response to impact is complex and that more detailed studies of its physiological effects should be made. Orig. art. has: 2 tables and 4 figures.

ASSOCIATION: none

SUBMITTED: 03Feb64

ENCL: 00

SUB CODE: LS, PH

NO REF Sov: 003

OTHER: 008

ATD PRESS: 3136

Card 3/3

POPOV, K.N.; LEVITSEK, N.I.; DOKTOR (schn., nauk., prof.)
retsenzent; GOREV, M.K.; Inzh.; red.

[Design of cam gears] Razchet i proektirovaniia kulach-
kovykh mekhanizmov. Moscow, Mashinostroenie, 1965. 303 p.
(MIRA 18:1)

L 8111-66 EWT(1) GW

ACC NR: AP5026033

SOURCE CODE: UR/0405/65/000/001/0111/0112

AUTHOR: Koshelev, L. I. (Moscow); Popov, N. N. (Moscow); Yartsev, P. I. (Moscow)

ORG: None

TITLE: Experimental investigation of the total impact accepted by an obstacle in a contact underground explosion

SOURCE: Nauchno-tehnicheskiye problemy goreniya i vzyryva, no. 1, 1965, 111-112

TOPIC TAGS: underground explosion, explosive, explosive charge, impact strength, impact stress

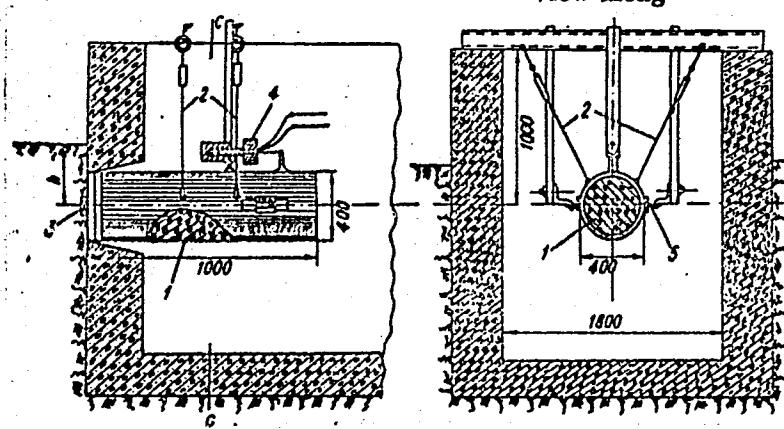
ABSTRACT: In the solution of applied problems there is a need to know the magnitude of the total impact on a solid obstacle during a contact underground explosion. Tests for that purpose were carried out on a stand carrying a 1000-kg ballistic pendulum hanging on 1000-mm long supports, shown in Fig. 1. Troyl charges (35 and 50 g) exploded at the central end surface of the pendulum; the ground thickness above the charge varied between 0 and 30 r_0 (r_0 = mean radius of the charge).

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L 8111-66

ACC NR: AP5026033



view along

0

- 1 - pendulum;
- 2 - support;
- 3 - trotyl charge;
- 4 - magneto-electric sensor;
- 5 - mechanical device.

Fig. 1 Ballistic pendulum for impact determination.

The analysis of the results shows that 1) the magnitude of the total impact during an explosion in sand (normal humidity) is proportional to the weight of the charge; and 2) with an increase in the depth of the charge, the impact increases according to the curve shown in Fig. 2.

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L 8111-66
ACC NR: AP5026033

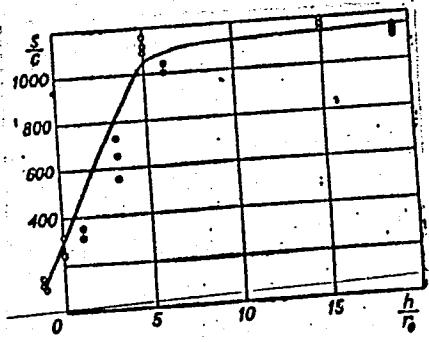


Fig. 2 Impact transfer as a function of charge depth.

Orig. art. has: 2 figures.

SUB CODE: ME, WA / SUBM DATE: 02Nov84

Card 3/3 PW

PANEV, G.A.; KUZUB, A.G.; CHUVPYLO, P.P.; KAMARDIN, A.M.; NOVIKOV, I.S.;
YAROSHEVSKIY, S.L.; POPOV, N.N., kand. tekhn. nauk

Effect of high temperature heating of the hearth on the operation
of a blast furnace. Met. i gornorud. prom. no.2:9-11 Mr-Ap '65.
(MIRA 18:5)

YAROSHEVSKIY, S.L.; MORGUNOV, I.A.; POPOV, N.N., kand. tekhn. nauk

Interdependence of the chemical composition and temperature
of cast iron and slag during the tapping of a blast furnace.
Met. i gornorud. prom. no.3:4-7 My-Je '65. (MIRA 18:11.)

VOLKONSKAYA, T.G.; PAVLOV, B.M.; POPOV, N.N.

Calculating the compression process in a piston type unit.
Sbor. rab. VTS MRU 4:184-216 '65. (MIRA 12:9)

PAVLOV, B.M.; POPOV, N.N.

Numerical solution of the Lagrangian problem for a channel
of variable cross section. Zhurn. rab. VTS ANU SSSR, No. 165,
(MIRA 18:2)

ANTONOVA, Ye. A.; POPOV, N.N.

Heat-resistant coating made of chromium carbide with silicate
binders. Zashch.met. I no. 61687-691 N.D. '65.
(MTRA 18t-1)

1. Institut khimi! silikatov AN SSSR.